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ABSTRACT

This paper reports on the use of teacher-written "cases" as evaluation data sources. Cases are first hand, candid, dramatic, highly readable accounts of events or a series of events in teaching. Eight teaching cases were collected which had been written by new teachers who graduated from the Maryland Collaborative for Teacher Preparation (MCTP), a reform-based specialist mathematics and science teacher preparation program. In these teacher-written cases, the new teachers identified and discussed the successes and the dilemmas they faced when they attempted to introduce into their schools instructional practices consistent with the recommendations in the national science education reform movement. Contemporary purposes for evaluation include: evaluation for accountability (measurement of results or efficiency); evaluation for development (information collected to strengthen institutions); and evaluation for knowledge (acquisition of a more profound understanding in some specific area or field). The MCTP cases were analyzed holistically and through the use of analytic induction. The findings were categorized by the goals of the MCTP. It was concluded that teaching cases can be used for all three evaluation purposes (including the more novel use of generating knowledge, the traditional realm of research) as well as for other beneficial purposes. (MM)

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The Uses of Teacher-Written Cases in the Maryland Collaborative for Teacher Preparation, a Reform-Based Specialist Mathematics and Science Teacher Preparation Program

ED 463 968

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The Uses of Teacher-Written Cases in the Maryland Collaborative for Teacher Preparation, a Reform-Based Specialist Mathematics and Science Teacher Preparation Program

Abstract

In this paper, I report the use of teacher-written "cases" as evaluation data sources. Cases are first hand, candid, dramatic, highly readable accounts of events or a series of events in teaching. I collected eight teaching cases written by new teachers who graduated from the Maryland Collaborative for Teacher Preparation (MCTP), a reform-based specialist mathematics and science teacher preparation program. In these teacher-written cases, the new teachers identified and discussed the successes and the dilemmas they faced when they attempted to introduce into their schools instructional practices consistent with the recommendations in the national science education reform movement. Contemporary purposes for evaluation include: evaluation for accountability (measurement of results or efficiency); evaluation for development (information collected to strengthen institutions); and evaluation for knowledge (acquisition of a more profound understanding in some specific area or field). I analyzed the MCTP cases holistically and through the use of analytic induction. My findings were categorized by the goals of the MCTP. I concluded that teaching cases can be used all three evaluation purposes (including the more novel use of generating knowledge, the traditional realm of research) as well as for other beneficial purposes.

The Uses of Teacher-Written Cases in the Maryland Collaborative for Teacher Preparation, a Reform-Based Specialist Mathematics and Science Teacher Preparation Program

In the context of the contemporary national mathematics and science education standards movement, major documents such as the National Science Education Standards (National Research Council, 1996, p. 62) and Principles and Standards for School Mathematics (2000, p.370) articulate the need for all teachers to engage in continuous professional development. Inquiry and reflection on practice are two learning experiences for teachers of science that are identified by prominent reform documents as necessary to include in a teacher's professional education. Inquiry and reflection are the hallmarks of practitioner-research. Educational theorists such as Hollingsworth (1997) define practitioner-research as a broadly defined research methodology that enables those who teach to reflect in a systematic manner on their own teaching.

In mathematics and science education, action research has represented most applications of practitioner research. Action research typically is a problem-oriented research methodology that is conducted in four discrete steps by the practitioner: planning, enacting, observing the plan, and reflection (Carr & Kemmis, 1986). Theorists such as Collins & Spiegel (1997) have promoted action research as a form of practitioner research that connects historically with the research genre promoted by Kurt Lewin (1946) and Stephen Corey (1953).

However, a less prominent form of practitioner-research that shows much promise in the current effort to enact standards-based continuous development recommendations is known as "teacher-written cases" (Far West Laboratory, 1991). Cases are first hand, candid, dramatic, highly readable accounts of events or a series of events in teaching. Kagan (1993) has pointed out that while the use of case-based pedagogies in education is not common they do have a long history in education (stretching back to 1927).

In this paper teacher-written cases (by new teachers and mentor teachers of teacher candidates) generated from the Maryland Collaborative for Teacher Preparation (MCTP), are presented. From the perspectives of MCTP new teachers, the teaching cases illustrate the rewards

of enacting reform-based mathematics and science pedagogy in their practices as well as the ongoing struggles that newly prepared reform-based teachers face. In addition, from the perspective of MCTP prepared cooperating teachers, the mentor cases illustrate the experiences they had assisting in the professional development of reform-prepared MCTP new teachers.

An Explanation of Cases

Case narratives offer a snapshot of teaching that are deliberately designed to provoke discussion that can be used for critical reflection, instruction, or as a tool for research/evaluation (Koballa & Tippins, 2000). As a tool for critical reflection, cases must include features associated with reflective inquiry. Theorists such as Zeichner and Tabachnik (1991) have argued that reflection that is critical is evidenced by considering "social, political, ideological, moral and ethical commitments of one's assumptions...."(as cited in Koballa & Tippins, 2000, p. 7). As a tool for instruction, cases are assumed to "be more motivating," "promote more transfer to all learners," and potentially more effective in transforming "all learners into better problem solvers and critical thinkers" than conventional methods (Ertmer, Newby, & MacDougal, 1996, p.702, as cited in Koballa & Tippins, 2000, p. 7). The educational value of cases for instructional purposes is achieved when readers engage in identifying a pedagogical problem, analyze the problem, and propose solutions guided by educational theory. Discussion of such cases is a focus on analysis, with student-generated solutions the goal. Finally, as a tool for research and evaluation, cases serve potentially as a source of data for accountability and for knowledge growth in the study of teacher's thought processes and pedagogical beliefs. As such, cases have been used as a forum to investigate: classroom assessment; curriculum development; professional development and preparation; discipline-based teaching methods; ethical dimensions of teaching; and other aspects of teaching practice.

Context of the Cases

The aim of the MCTP is to promote the development of teachers who are confident teaching upper elementary/middle level mathematics and science using technology, who can make connections between and among the disciplines, who can use alternative ways to assess learning,

and who can provide an exciting and challenging learning environment for all students (University of Maryland System, 1993). As such, goals include: (a) introduce future teachers to standards-based models of mathematics and science instruction; (b) provide courses and field experiences that integrate mathematics and science. In practice, the MCTP undergraduate courses are taught by faculty in mathematics, science, and education, who strive to diminish faculty lecture while emphasizing student-based problem-solving in cross-disciplinary mathematical and scientific applications. Since the MCTP program was funded in 1993, the program has graduated over 200 MCTP new teachers and influenced many thousands more who enrolled in mathematics, science, and pedagogy courses taught by MCTP faculty.

The MCTP teacher's candidate's program of study is distinguished from non-MCTP teacher preparation study programs by requiring additional mathematics and science content courses and a summer internship. For example, the University of Maryland, College Park MCTP elementary program (grades 1-8 certification) requires 36 credits of mathematics and science courses (18 hours of each discipline) and a summer internship in a mathematics or science rich environment. This contrasts starkly with two programs for elementary teacher candidates who choose not to emphasize either mathematics or science as field of concentration. They are required to earn a total of 11 credits in mathematics and 8 in science as well as 18 in their chosen field, and they do not have to take a summer internship. Non-MCTP elementary teacher candidates who choose to emphasize mathematics (only) must earn 18 credits in mathematics and 8 in science. Candidates with a science (only) emphasis must earn 18 credits in science and 11 in mathematics. The MCTP content courses (open to all teacher candidates) have been reformed to conform to the MCTP program goal. Mathematics courses are distributed across four areas: algebra/number, probability and statistics, geometry, and calculus. Science courses are distributed across three areas: physical science, biological science, and earth and space science.

The MCTP mentor teachers, experienced elementary and middle level mathematics and science teachers who taught primarily in Montgomery and Prince George's County, Maryland, participated in a two-week in duration (approximately) mentor teacher summer workshop. The

workshop was conducted at the University of Maryland, College Park under the guidance of Dr. Anna Graeber, Dr. Loretta Molitor, and Dr. Sharon Clark. In this workshop, funded in 1995 and 1996 by the MCTP (NSF) and in 1997 by the Dwight D. Eisenhower Professional Development Program as well as the NSF, a total of 69 teachers received extensive professional development in Standards-based mathematics and science pedagogy, the use of technology, and in intern supervision. The teachers also became fluent in the programmatic aspects and goals of the MCTP. Each cohort of mentors also participated in two days of follow-up activities, primarily focused on mentoring, during the school year following their summer workshop.

Development of the Cases

It was recognized early in the MCTP program that considerable attention would be placed on the graduates of an innovative and programmatically ambitious program such as the MCTP. It was anticipated that interest would focus on documenting if the MCTP new teachers taught mathematics and science in ways that aligned with the reform-based goals of the MCTP. There was also considerable interest in learning how the new teachers thought about the successes and challenges of introducing new ideas in elementary and middle level schools. Finally, there was a realization that the preparation of reflections on practice by the MCTP teachers (new and mentors) would contribute to the MCTP teachers' continuous professional development by encouraging a critical analysis. Therefore, in addition to more accepted data collection sources such as survey and in-depth researcher conducted case studies of MCTP teachers, teacher-written cases were included as one component of the extended research program and evaluation of the MCTP program.

Starting in the spring 1999 and extending to fall 2000, the MCTP solicited and received cases from new MCTP teachers. In survey mailings that each new MCTP graduate received requesting response to a "MCTP Teachers Survey" an invitation to write a reflection on their teaching was included. Specifically, the new teachers were asked to reflect on successes and challenges of instituting the MCTP reform-based "style" of teaching in their practices. In appreciation for their efforts to write cases, each case writer was offered a $200 remuneration.

To promote the solicitation for MCTP cases, and to provide an example of a case for the interested MCTP participants, McGinnis (MCTP Principal Investigator of Evaluation and Research) crafted a case from his perspective as a MCTP faculty member. He presented that case to MCTP participants and graduates at a statewide MCTP conference for MCTP teacher candidates, new teachers, and MCTP mentor teachers during the winter of 1999 (McGinnis, 2000a). Included at the conference were MCTP mentor teachers. Upon learning of the case strategy, several mentor teachers expressed interest in writing cases from their perspectives of cooperating teachers. Subsequently, mentor teachers in the MCTP were also solicited by a mailing to write a case under similar conditions as presented to the MCTP new teachers. The only difference in the solicitation was to change the focus to successes and challenges of mentoring MCTP students during their field-based component of the MCTP as opposed to a focus on teaching practices. Starting in the summer 1999 and extending to the summer of 2000, the MCTP program received cases written by MCTP mentor teachers.

List of the MCTP Cases

The cases presented in this chapter were edited for minor editorial changes only. The goal was to represent as much as possible the actual voices of a select sample of MCTP new teachers and MCTP mentor teachers. Appendix A contains an example of a MCTP teaching case. Appendix B contains an example of a MCTP mentor case. [Note: Interested readers may obtain other MCTP cases by sending a request to the author,jm250@umail.umd.edu.]

I. New Teachers (By title and Author):

1. "Science Fair Projects" by Kristina Clark
2. "Me? A Middle School Math teacher?" by Josephine To
3. "Mathematics and Science Teaching as a Voyage of Discovery" by Jessica Ort
4. "My Challenges as a Private School Mathematics and Science Teacher" by Stephanie Colby
5. "Bringing the MCTP into my Teaching World" by Holly A. Nevy
6. "Differientiation of Instruction" by Autumn Moore

7. "My First Year of Teaching as a Graduate of the MCTP" by Jessica Phelan

8. "Becoming a Good Teacher by Being Open to Learning" by Kate Walde

II. Mentor Teachers (By title and Author):

1. "Mentoring in an 'Up and Down' Component of Teacher Education: The Student Teaching Experience" by Cynthia Sadula

2. "Teaching for Understanding in Math and Science" by Janet Leonard-Walker

3. "A Comparison of Interns" by Mary Beth Johnson

A Reference Guide to the MCTP Cases

Teaching Cases. The teaching cases were analyzed using the following categories that align directly with the goals of the MCTP:

- New teachers who are confident teaching mathematics and science using technology;
- New teachers who can make connections between and among the disciplines;
- New Teachers who can use alternative ways to assess students' learning; and,
- New teachers who can provide an exciting and challenging learning environment.

Since the guidelines for the MCTP teacher-written cases were broad in scope (the new teachers were asked simply to reflect on "successes and challenges of instituting the MCTP reform-based "style" of teaching") each individual case may or may not narrate to any particular MCTP goal. For example, while Clarke in her case "Science Fair Projects" articulates a narrative that applies to all four of the MCTP goals, To in her case "Me? A Middle School Math teacher?" presents a narrative that applies to a limited number of MCTP goals. Similarly, the other six MCTP teacher cases narratives apply differently to the MCTP goals. To assist in locating cases that narrate to particular MCTP goals, Table 1 contains a case reference guide.

---Insert Table 1 About Here---

As way of an example, if prime interest is in reading cases that apply to the MCTP goal of "New teachers who are confident teaching mathematics and science using technology" the Table 1 reference guide identifies the cases written by Clark, Nevy, and Walder.

Clark in her case narrates how she engaged her fourth grade students in a sustained science inquiry project that made connections to mathematics and used technology,

> The students infused the use of technology with their projects because we were able to use computers to make our charts, record data, and type reports. The use of the computers allowed the students to make more professional looking projects and it also made the students take more pride in their work.

Nevy in her case narrates how she was determined to use technology with her challenging middle level mathematics students,

> I still use my calculators and computers when I can and try my best to closely monitor the students. I feel that depriving the kids is not the solution and that we must stress over and over that these are "the students' things". When one is stolen, then it is stolen from the students. I hope that as we continue to learn how to use these pieces of technology, the students will begin to have more respect for them and enjoy using them; thus, leading to less damaged and stolen pieces. I cannot, as a teacher, deprive the students of a needed area of education, no matter what.

And Walder in her case narrates her developing comfort level (starting in her MCTP teacher education program and continuing in her peer instruction at her school) with the use of technology in her seventh grade mathematics practice,

> In addition, the use of technology was incorporated in many of the lessons. While I did not have a great deal of knowledge (although I was introduced to a broad range of technology in my MCTP teacher preparation program) of the graphing calculator and Computer Based Labs (CBL's), several teachers in the department were very well versed at the use of these devices. Therefore, they were of great assistance to me in teaching students how to use the graphing calculator and CBL. Students enjoy these activities and learning experiences, and without the collaboration with my colleagues, my students may not have experienced these wonderful opportunities. However, because we were planning together I learned how to

better incorporate technology in my classroom. Now I feel like an expert when it comes to using the graphing calculator and CBL.

Conversely, if an interest is in examining the MCTP teaching cases for instances of challenges in realizing the MCTP goals in school practice, Table 2 contains a reference guide.

---Insert Table 2 About Here---

For example, Colby in her case narrates poignantly the challenges of making connections between disciplines, using alternative ways to assess students' learning, and providing an exciting and challenging learning environment for all learners in her private middle school. She states about her mathematics and science classrooms,

> Math was so hard for me to teach because it was too structured. The lessons were dry and direct and I found myself standing up at the overhead lecturing for each lesson. That was exactly the opposite of what I wanted to be doing. I couldn't find a way to change it though because it was so controlled and limiting and I had to get through the lessons to get to the tests. I would look out at the girls as I was delivering what I found to be very boring lessons, and could see that they felt the same way. Even though they were not at all inspired by these lessons they continually copied down the notes I put up. I was glad that they could stay on task through these lessons, but felt awful because I wasn't able to teach the way I wanted to. I wanted to be able to use manipulatives, let students discover concepts, and provide them with discussions and projects. However, the program didn't often allow for these kinds of activities, and thus I struggled yet again.
>
> My difficulties with science once the school year started were at the opposite end of the spectrum from mathematics. Where I felt restricted with math, I felt I had too much freedom with science....I found I didn't have the resources or the knowledge base to go out and create these spectacular lessons on my own. It was too much to ask for me to start from the bottom and be able to build everything up from there. I had great ambition to go out there and make learning fun, but my ambitions were quickly squelched by a lack of guidance and an overwhelming amount of work. In our summer efforts, we planned many

interesting science lessons, but the planning was much easier than the implementation. My room was about the farthest thing from a science classroom, and both space and equipment were limited

Similarly, Phelan in her case narrates her challenges in implementing the MCTP goals in her public middle school mathematics and science classes,

My first two months of teaching really killed me. I wanted so badly to incorporate all of the strategies that I had learned through MCTP. I really wanted all of my lessons to be hands-on and meaningful. I tried to incorporate math into science lessons, and science into math lessons, so much that my students would often say, "This isn't science class, this is math class," or vice versa. I also wanted to incorporate technology into my lessons, but dragging six computers into a classroom where you will only teach one period just didn't seem like an efficient use of time. Taking a class to the library to use the computers was virtually impossible, because teachers sign up for the lab six months in advance and then stay there for two or more weeks at a time. I would get to school at 7 a.m. and often stay until 7 p.m. planning lessons, gathering materials, writing e-mails to parents, and grading. All the while, seeing other teachers leaving the building as soon as the afternoon bell rang.

Mentor Cases. The three mentor cases narrate individual MCTP cooperating teachers' experiences supervising MCTP (and other) teacher candidates during their final semester field-based experience. For reference guide purposes, the key insight from each case is identified below. Interested readers are invited to read in their entirety the mentor teachers' cases for elaboration.

Sadula discusses in her case of an MCTP intern placed in her seventh grade science class the imperative need for mentor teachers to monitor the confidence level of even the most highly prepared teacher candidates in mathematics and science. As she states, open communication between the mentor teacher and the intern is essential in a productive relationship between the mentor teacher and her intern,

The open communication that we had (and still have) helped me to understand the depth of the questioning that even the very best teaching intern goes through during

their internship. As I work with more and more teaching interns I am repeatedly reminded of this low point in the internship. I now watch for it and try to stem it off before it gets to point that Chris [her MCTP intern] suffered.

Leonard-Walker discusses in her case of an MCTP intern placed in her fourth grade class the imperative need for the mentor teacher to model for her intern reform-based practices in mathematics and science and to engage in ongoing reflection. Leonard-Walker's professional development experience in the MCTP and another NSF funded project enabled her to articulate comprehensively to her intern a reform-based teaching/learning philosophy that was represented throughout her instruction. As she states, the cooperating teacher modeling reform-based professional practice were essential,

> Since Stacy [an MCTP intern] had been observing and listening to me reflect on lessons I taught, heard me discuss the pedagogical experiments I took, the successes I experienced, and the future improvements I identified, she felt the freedom to do the same with me. I believe that since I was open with her and enlisted her help and suggestions, she was able to reciprocate. Hence, she began to understand the reasons for instructional decisions; was able to analyze past, present, and future teaching/learning situations; and could plan accordingly.

Johnson discusses in her case of two MCTP interns placed at differing times in two different classrooms and schools (third and fourth grade) the complexity of context (curriculum, instruction, and student diversity) that impacts the relationship between a mentor and her intern. In discussing possible reasons for the different experiences with her two interns, she states,

> I don't know what made the difference in the interns' experiences. Perhaps it was seeing me at my strength -- science in the lab rather than struggling to learn a new curriculum. Perhaps the milder make-up of the first class versus students with emotional problems made a difference. The disruption in the flow of teaching styles and locations could have made a difference. Individual expectations and attitudes

towards the diverse requirements of elementary teaching could have also clouded the experience. I felt I gave both interns as much time and energy as I had.

Uses of the MCTP Cases

The most conspicuous uses of the MCTP cases have been for program documentation purposes (McGinnis 2000b, 2001). A fundamental assumption of the MCTP is that changes in pre-secondary level mathematics and science educational practices require reform within the undergraduate mathematics and science subject matter *and* education classes teacher candidates take throughout their teacher preparation programs (NSF, 1993). A critical need has been to document, interpret, and evaluate reform-efforts being conducted in science teacher education (undergraduate and in the workplace). As a result, the new MCTP cases have been presented as data sources in crafting a "useful or interesting" (Becker, as quoted in Pushpin, 2000, p. 9) depiction of how the MCTP program graduates see their professional lives unfolding. The cases have illustrated as a body of narrative expression instances of realization in instituting reform-based practices in mathematics and science as well as instances of challenges in realizing the project's goals in elementary and middle level schools.

In addition, one of the new MCTP teacher's cases ("Differentiation of Instruction" by Autumn Moore) has been used repeatedly for instructional purposes in the MCTP program at the University of Maryland, College Park. Moore's teaching case has added an educational context and increased MCTP and non-MCTP motivation in learning methods to implement inclusive-education in mathematics and science contexts. The Moore case has promoted more active student learning and engagement by requiring prospective teachers to discuss a specific example of real world mathematics and science teaching in a reform-based classroom. Table 3 contains a list of questions that assist in guiding discussion of Moore's case.

---Insert Table 3 About Here---

Initial questions such as "How do you react to Autumn's initial conception of differentiation of instruction? Does she voice sentiments you hold (or once did)?" enable

prospective teachers to voice any apprehensions they may also hold toward teaching mathematics and science with differentiation. More critical questions such as "What additional strategies would you suggest to Autumn and others interested in this educational initiative?" prompt prospective teachers to use in a problem-solving manner the methods and theories they encounter in their teacher preparation courses. This example of one MCTP case used in an undergraduate teacher education program suggests that all of the MCTP cases hold valuable instructional potential in teacher education learning environments providing that appropriate guiding questions are crafted to accompany each case.

Finally, the cases have been identified by the MCTP new teacher and the MCTP mentor teacher case writers as important opportunities for professional development. This use of the cases may be the most significant to the professional lives of the case writers. In informal conversations with MCTP personnel the case writers have expressed how valuable they found the process of writing the cases. In a profession that is characterized by time pressures and considerable daily responsibilities, an opportunity to critically reflect on professional practice as a new teacher or as a veteran mentor teacher is not common. It is appreciated, however. As expressed eloquently by one new MCTP teacher in a note attached to her completed case:

> I want to thank you for the opportunity to reflect on my first year as a whole. While I reflected on many pieces of it, I never found the time to look at it as a whole. I found it very moving as I recalled special moments and very encouraging as I considered the growth. (Jessica Phelan)

Discussion and Conclusion

Shulman (1992) has argued repeatedly that teachers can write compelling narratives that do not have to go through researcher case study "translations" (p. 251). As illustrated by the MCTP cases written by program participants (new teachers and mentor teachers), the power of the insider's perspective as presented by the teacher's voice is apparent. We believe that these cases

contain the ring of authenticity that reaches out to those interested in entering the professional lives of MCTP teachers and mentors.

The teaching cases detail the complexities of implementing reform-based practices in elementary and middle school environments. From these cases we learn that achieving reform in existing school cultures is an extremely intricate process, full of great possibilities (as told, particularly, by Clark, To, Moore, and Walder), as well as of challenges (as told by Ort, Nevy, and Phelan), and even of seemingly impenetrable barriers (as told by Colby). We come once again to the conclusion that if the learning/teaching environment context is open for reform, the reform-based practitioner is essential for it to occur.

The mentor cases all depict honestly the relationships between the more experienced reform-based teacher and the aspiring teacher candidate. We learn that dilemmas emanating from reform impact even the most experienced and capable of teachers as they interact with individual prospective teachers.

Ultimately, we conclude from the MCTP teacher-written cases that the teachers' unique perspectives are imperative to consider as we investigate the impact of an innovative, reform-based teacher preparation in enacting systemic mathematics and science reform in our nation's schools.

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Appendix A: A sample MCTP teacher-written case.

"My Education as a Private School Mathematics and Science Teacher"

By Stephanie Colby

Finally, after four years of my innovative teacher education program (the MCTP), it was time for me to enter "the real world." Strangely frightening and exciting at the same time, this was what I had been waiting for ever since my field experiences had begun. I was learning all these fascinating and innovative methods in my college courses, and was repeatedly frustrated when I didn't get to see them used in the classroom. "Think WIGMOC" (When I Get My Own Classroom) they would tell us when we'd struggle with these conflicts. And finally that day had come! It was my turn to be the one making the decisions, doing the planning, and finally be able to put to practice all the new methods I had learned. My mind was full of idealistic thoughts and excitement for all that lay ahead of me. Unfortunately, it didn't turn out as well as I had planned.

I had always pictured myself working in a public school system. It was all I had really known. I went all the way through school at public institutions, and had even completed all of my field experiences and student teaching in public school systems (Baltimore and Harford Counties). When it came time to make my decision about where I would begin my first year of teaching, I had more to consider than just my previous experience. Family considerations dominated my geographic work preferences. Though I really enjoyed my teaching experiences in Baltimore County and Harford County, and was offered positions in both counties (and Howard and Charles in addition) I knew I wanted to be near my family in Montgomery County. So that limited my choices to schools in Montgomery County.

While the county school system offered me an open contract, I was looking for more certainty about exactly where I would be teaching. So, with all these things in mind, I made the decision that seemed to fit all my requirements. It was close to home, I knew exactly where the school I would be teaching in was, and I would be teaching math and science to middle school age students. It was a private school, something I hadn't really figured in my future. However, it seemed to be the best fit for my life at the current time. All summer long I was filled with anticipation at the opportunities that lay ahead of me. Soon, through my instruction, I would have

the opportunity to impact the lives of my future students, to have the chance to make math and science fun for them. Especially exciting was the idea that my position would give me the chance to serve as a positive role model for these young women. I convinced myself I had made the best choice and that this was a good place to start off. At least that's what I thought.

I knew from the very start that this job would be quite different from my field experiences in the public schools. I could definitely deal with the smaller (15-17 students), single-sex classes (only females) which greatly decreased the management efforts in the classroom. The unique schedule format was also something to which I could adapt. The school used a block schedule, where I would have each of the two classes for an hour and a half to two hours. In that period I would divide my teaching between math and science. Since I would have both classes in the morning, the afternoon was left for planning. On Tuesdays I would done teaching by 11:30 a.m. What an ideal situation this sounds like: small classes, plenty of planning time, minimal discipline problems, who could ask for more?

Things were definitely very different at the private school. For example: no textbooks for the science classes, but a highly structured mathematics program with a new lesson each day, 30 homework problems each night, a quiz every day, and a test after every four or five lessons. Probably the most interesting difference was the fireplace I had in my classroom! (The part of the school where my room was located was part of an old ranch house.)

Unfortunately, there was one thing on which I just couldn't seem to get a handle. That one aspect was the source of great difficulty and frustration for me. This factor was probably the biggest difference I would face from my public school experiences. They told me at the very first interview that the school operated instruction on a thematic basis. This meant that each trimester, there was a different theme for each grade, and that was the only restriction or guideline that the teacher was given in regards to what they were responsible for teaching. While I must admit there were times before when I felt stifled by curriculum, in public school settings I had never imagined the reality teaching completely curriculum free. The thought was frightening and liberating at the same time. It was because of my fear of having no curriculum that I hesitated on accepting the

position, but I was repeatedly reassured by other staff members that it was hardly as bad as I was imagining. So after a couple weeks of stewing, I decided to override the doubtful voice in my mind and accepted the position teaching 7th and 8th grade math and science.

With no curriculum with which to familiarize myself, I spent most of my summer working with John, the other new 7th grade math/science teacher, to build our own curriculum. Both being new to the school and apprehensive about starting the school year, we went in with the attitude, "Better to be over prepared than under prepared." We spent many weeks trying to figure out exactly how we were going to incorporate the theme "Conflict" through our classes. Ultimately, we decided to start with a unit on Ecology. We would study different environmental factors and focus on the conflict between humans and the environment. We had a basis to build on since I had created a two week ecology unit for my seventh grade student teaching class, but we would definitely need to add more, in order to expand two weeks into two and a half months. We spent many busy summer hours discussing, researching, and deciding how we were going to familiarize the students with this information, what kinds of projects, assignments, activities, and lessons we were going to present to them. As I recognized the great deal of time it was taking us to construct this first unit, I began to get worried about the two remaining units. If it took us many summer weeks, when we didn't have daily classes to prepare for and assignments to grade, how would we ever be able to repeat the same planning performance for the following units?

Now remember, though I have just described my planning experience for the first trimester for the 7th grade, that was only half of my challenge. The summer days that I wasn't spending working with John, I was working with Brian, the other 8th grade math/science teacher to put together the first unit for the 8th grade. My planning sessions with Brian presented me with a different struggle. Brian was familiar with the way things ran at the school since he had been teaching there for four years. While this was definitely a positive aspect, it also had its drawbacks. With the experience Brian had over me, and because of the difference in our personalities, he was much more comfortable and laid back about things. He had taught drugs and the human body for the 8th grade "Choices" theme before and though he didn't have any written remains from this

previous experience, he had the memory of what he had done before and could operate off of that. I on the other hand, had a very limited knowledge basis of this subject matter, and minimal experience teaching those subjects, and both of those factors combined made me very uncomfortable. I didn't have a curriculum that I could refer to help me identify the objectives, or the important points to get across, and the topic just seemed so massive I was unsure where to even begin.

Despite all my worries and anxieties the school year began, and my first year of teaching started. And with the start, I was thrown in to a whirlwind of teaching that was nothing like I had ever expected it to be. I met my homeroom and two classes, and found my students to be wonderful, though certainly not without difficulties or complications. But I was lucky, because for the most part, I didn't have to deal with one of the biggest issues for beginning teachers: classroom management. With only about 16 students and a small classroom my voice didn't have to carry far to reach all of the students, and the girls were so well behaved that the only slight behavior problem that I encountered was too much talking. This was to be expected though considering my audience of teenage girls. I did however, have to pay the price in other areas.

Once the school year started and I didn't have all day to put together all four of my lessons for each day, things got much more difficult. I was trying desperately to keep up with Brian and John's classes, but somehow they seemed to be able to get through more than me all the time. Math was so hard for me to teach because it was too structured. The lessons were dry and direct and I found myself standing up at the overhead lecturing for each lesson. That was exactly the opposite of what I wanted to be doing. I couldn't find a way to change it though because it was so controlled and limiting and I had to get through the lessons to get to the tests. I would look out at the girls as I was delivering what I found to be very boring lessons, and could see that they felt the same way. Even though they were not at all inspired by these lessons they continually copied down the notes I put up. I was glad that they could stay on task through these lessons, but felt awful because I wasn't able to teach the way I wanted to. I wanted to be able to use manipulatives,

let students discover concepts, and provide them with discussions and projects. However, the program didn't often allow for these kinds of activities, and thus I struggled yet again.

My difficulties with science once the school year started were at the opposite end of the spectrum from mathematics. Where I felt restricted with math, I felt I had too much freedom with science. It was the ideal situation we had all dreamed of in our methods classes, not being restricted by a curriculum, having the freedom to plan as many hands on lessons as we could handle, providing time for exploration and discovery, and basically having the opportunity to do things anyway in which you wanted. For a first year teacher however, this dream turned out to be a nightmare. I found I didn't have the resources or the knowledge base to go out and create these spectacular lessons on my own. It was too much to ask for me to start from the bottom and be able to build everything up from there. I had great ambition to go out there and make learning fun, but my ambitions were quickly squelched by a lack of guidance and an overwhelming amount of work. In our summer efforts, we planned many interesting science lessons, but the planning was much easier than the implementation. My room was about the farthest thing from a science classroom and both space and equipment were limited. If we wanted to do an experiment in the lab, Brian and I had to stagger the lessons because his room was the only science lab for the middle school. We had designed projects that required both 7th and 8th classes to use the computer lab (7th graders were doing research, 8th graders were going to construct their own web pages), so again lessons had to be staggered in order to allow all the classes an opportunity to use the lab.

It was all so much more complicated than I had expected, and being the perfectionist that I am, I tried so hard to do everything I could to overcome these complications and make things the way I had planned them to be. I was almost always the first one there and the last one to leave, and yet somehow I still felt as if I wasn't doing enough. "If I am working so hard", I often thought to myself, "why can't things turn out the way I want them to? Why can't I teach the way MCTP inspired me to teach?" After many hours of reflection and self analysis I realized that I had to cut myself some slack. It wasn't my fault that things weren't turning out the way I had imagined they would. The situation I was in was much to difficult for someone who was still learning how to put

everything together, trying to learn from experience through the first year of teaching. Instead, thrown ahead of the learning curve allowed for first year teachers I was expected to build on years of experience I didn't have.

Please do not misinterpret me. Though the private school wasn't the ideal place for me, the school wasn't a horrible place. Though the other teachers couldn't give me the structural and content support that I was longing for, they were always there to provide me with the emotional support that was also in great need. Sadly, the situation only got worse, my hours at school continued to increase, as my appetite and hours of sleep decreased. I found myself in a conflicted state where I knew I wasn't in the right place, but I didn't know how to get out. It wasn't a simple situation and involved more factors than enumerated above. Until one day after school, I finally brought it up in one of my many discussions with the Dean of the Middle School and together we decided, that the best move for everyone would be to remove myself from the situation. So within the first month of my first year of teaching I left. We all parted on amiable terms, though I do still regret, I never had the opportunity to say good-bye to my first set of students.

The first days after I left were the hardest. Now instead of struggling with the fact that I couldn't implement the MCTP ideals in my classes, I was dealing with the fact that I didn't think I could cut it as a teacher. I felt like I had failed and didn't know if I would ever be ready to go back again. Time has passed now, and I've spent the last month reflecting on what happened, dissecting the situation and trying to figure out where things went wrong. I replay my lessons in my head and now I can see that the lessons I delivered were quite successful, they just didn't meet up to my expectations. I look over the lessons that I worked so hard on planning this past summer, and see how organized and well thought out they are, and realize that they too were a success, but similarly somehow they did not match up to my expectations. Through all of this I have come to realize that I set myself up for failure with such high expectations and by putting myself into a position that was not made for first year teachers. I had such ambition and drive to go out and be the best teacher, to make learning fun, and to make a difference. But I got so caught up in having to plan my whole curriculum, something most first year teachers don't have to

struggle with, that I didn't have much left when it came to the actual teaching. I accepted a job that I thought was the ideal place to start, and now I realize that it would have been more ideal had I had years of experience to bring with me.

We've always been taught that one of the best ways for our students to learn is through experience. Though this experience isn't one I'd ever like to repeat, I can honestly say, it's taught me a great deal about myself and has helped me to realize what I need to look for in a teaching position. I am using my time to explore different venues of education, again trying to learn from experience where I fit best. Soon, I know I will be back out there filled with the same ambition and drive. This go around, however, I will know what I need to get started, and I will go in with more reasonable expectations.

Appendix B: A sample MCTP mentor teacher case

"Mentoring in an 'Up and Down' Component of Teacher Education, Student Teaching"

By Cynthia Sadula

No matter how much you read or how much you study and find out about the "ups and downs" of student teaching, the roller coaster ride of emotions still happens - like finishing an ice cream cone; you know its coming, but you are still surprised when it happens.

I have been teaching science and math at the secondary level for over twenty years. During this time I have had the opportunity to mentor five teaching interns from four different institutions. All of these individuals have struggled through the same highs of confidence and lows of professional doubt.

"Chris", like "Pat", is truly a name in our society that has no set gender, and so it is the perfect name for my MCTP teaching intern. The details of this experience are as true for men as for women.

My current teaching assignment is at a Washington, D.C. suburban middle school. As department chairperson and academic team leader I teach four life science classes. Three of the classes are designated "average" or "regular" and one class is composed of twenty-nine TAG or G/T students (i.e., identified as "gifted"), and five students identified as educable mentally retarded.

Chris came to my school following a very successful academic career, in possession of a superior understanding of scientific concepts. Having already completed the elementary school experience, Chris started her middle school experience at the end of October.

On the first day of the internship I introduced her to the students. For two days she observed what I did in the classroom. Every free moment, between classes or during planning periods or at lunch, we would review the characteristics of the individual classes and why I used specific techniques of presentation and classroom control. Behavior

management was a major concern to Chris, realizing that students who are not paying attention are not able to learn.

Chris and I had worked together to develop exactly what we would present to the class. Our expectations were clear and the mode of presentation was fairly well established. In other words, we both know what was going to happen. I taught first period class and, as the students were leaving I turned to Chris. "You're on!" I said. "This next class is yours."

Without hesitation Chris jumped right in. Students listened attentively as she explained the general characteristics of an environment. She talked confidently about the differences between biotic (living) things and abiotic (non-living) things right up to the dismissal bell. From then on, until she completed her internship in December, the second period class (the gifted students) were hers. We discussed enrichment activities and modifications which were appropriate for "her class".

By the end of the second week she was teaching two classes, second and seventh periods, while I did the planning for the classes. Chris now had the experience of guiding the classes, differentiating presentation to maximize the students' understanding and trying an assortment of behavior management techniques so "ensure" maximum learning. We were already one quarter of the way through the intern experience, and it was time for Chris to start to develop lessons.

During lunch and a planning period we talked through the unit to be presented at the end of her internship; the lesson she would develop and present to all of the students. Chris added this to her homework and began to develop lessons to present. As I said to her, my task, at this point, was to provide guidance and assistance. There is nothing that a teaching intern can do in the classroom that is permanent. As the master teacher, I should be able to correct any errors and clear up any problems that might occur.

By the end of the fourth week, half way through the internship, Chris was teaching all of the classes and developing the lessons to present in two weeks. As frequently

happens, students gobbled up the material we gave them and moved more quickly than we expected. Chris' lessons would be presented at the end of the sixth week, just two days earlier than we had planned. This provided just a little additional pressure for Chris, but she seemed to welcome it.

The big day of beginning her unit came, and Chris began to present the information on Wednesday, at the end of each class period Chris introduced the next unit. Thursday the students successfully completed the first part of the activities, with analysis to begin on Friday. During Thursday students had collected data relating the permeability of pebbles, sand and a sand/pebble combination. The activities had seemed very successful and students were able to demonstrate fairly accurate data, but collecting data and analyzing data are two very different skills.

Friday turned out to be a day of reviewing data. Students filled in some of the information that they had not accurately collected. In reviewing the lesson with Chris we realized that the pace was too quick. Students needed some time to review their data and also needed some guidance in understanding what they had done and what they had found out.

The weekend seemed to be a low point. I was very busy and did not call Chris at home. (Even though I had only called one weekend, I think now that I should have called that weekend.) Chris returned to school on Monday clearly frustrated. At first I thought that something had happened with the "significant other" or with the family in Pennsylvania or, perhaps I had inadvertently done something to offend. But I knew that she had not gone home, and there was no boyfriend that I was aware of and we had a relationship that allowed for open communication. By the end of second period I had decided to ask her, straight out, what was wrong. Considering her expertise and clear ability in the classroom I was truly surprised at her response, "I think I'm not meant to be a teacher," she said.

The surprise that I felt must have shown on my face and Chris misinterpreted it. "Oh," she said, before I had a chance to say anything. "You must have known this all the time. I guess I just needed to find it out."

I thought that all along during the experience I had supported her and given her positive feedback. At this point in her experience she thought that my comments had been designed to placate her. Had I been too effusive in my positive comments? Was there a lack of balance in what I said? Was there some signal from her that I failed to be aware of?

The open communication that we had (and still have) helped me to understand the depth of the questioning that even the very best teaching intern goes through during their internship. As I work with more and more teaching interns I am repeatedly reminded of this low point in the internship. I now watch for it and try to stem it off before it gets to point that Chris suffered.

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